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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/698,204	08/14/1996	TOSHIMITSU KONUMA	0756-1553	1806

22204 7590 03/06/2003

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EXAMINER

PARKER, KENNETH

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 03/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 08/698,204	Applicant(s) KONUMA ET AL.	
	Examiner Kenneth A Parker	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-15, 21, 24-29, 35-40, 45, 47-49 and 56-70 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 56-60 is/are allowed.
- 6) ☒ Claim(s) 13-15, 18-22, 24-42, 45, 46 and 56-60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 08/301,774.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 15/2,30
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 34,37,46
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. **Claims 25-29, 35-39 and 47-49, 61-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mawatari et al 5200847 in view of Niki, U.S. patent # 5,278,682.**

Mawatari et al discloses a liquid crystal device with a first substrate, second substrate, active devices in an active display region, driver circuits, and a sealing member, which encloses circuits, seals the liquid crystal, and which may optionally completely encloses the circuits (spec). The right side is shown with the edges of the sealant and substrates at least substantially aligned. The circuits on the substrate have a sealant between themselves and a cover glass.

The sealant being a UV curable adhesive was a conventional practice which offers the benefit of enabling selection of the time of curing and patterning, the circuits on both the driving section formed using the same processes as those in the display section. The use of common processes saves cost and the UV curing enables low cost simple fabrication. Therefore, it would have been obvious, in the device of Mawatari et al, to use a UV curable adhesive to enable patterning and simple low cost fabrication, and to use common processes for both circuit regions to save cost. The use of a fill port at the aligned edges was disclosed by Niki, stating the advantage of enabling filling without immersing the substrates in the reservoir (abstract). Therefore it would have been obvious, in the device of Mawatari et al, to employ a fill port at the aligned sides (those without drive circuits) for the benefit of avoiding immersion of the

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substrates. The use of silver paste to connect the electrodes was conventional, and would have been obvious for that reason. The use of sealing resins was conventional in semiconductor devices, and considered to be obvious for that reason.

2. Claims 13-15, 21, and 24-29, 35-40, 42,45, 47-49 and 66-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuo JP KOKI # 1-49022 in view of Niki, U.S. patent # 5,278,682.

Matsuo discloses a liquid crystal device with first substrate, and active matrix substrate with pixels in a matrix, driver circuits comprising TFTS, second substrate, liquid crystal between the substrates a resin material covering the driver circuits, and a sealer around the liquid crystal and driver circuits. Not clearly disclosed is the presence of an “inlet”, however, the materials must have been introduced to the device, so somewhere, on something there must have been an inlet, or it would have been obvious to employ an inlet to enable control of the introduction of the materials.

The use of a fill port at the aligned edges was disclosed by Niki, stating the advantage of enabling filling without immersing the substrates in the reservoir (abstract). Although Matsuo shows a device with circuits on both sides, it was well known that the drivers could be functionally equivalently placed on two sides, which would have been obvious for that reason. Therefore it would have been obvious, in the device of Matsuo, to employ a fill port at the aligned sides with two sides having the circuits, for the benefit of avoiding immersion of the

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substrates. It would have been further obvious to use the side with out the circuit because the sides with the circuit have a material enclosed in a sealant which would have been an obstruction from putting in a port there. The fill hole of Matsuo is shown on a side substrate, which simply had to be done to enable filling (the liquid crystal could not be filled through the double structure with the circuit on four sides. With the circuit on two sides, the conventional approach could have been taken, and therefore would have been obvious.

Providing with active matrix as amorphous silicon and the driver crystalline was well established, as the driver section is often the only one that requires the higher speed requiring crystalline silicon. The employment of and MIM diode was well known in the art as a lower cost alternative to TFT's, and epoxy and UV curing resins is essentially a complete list of the conventionally use materials, used for low cost, ease of assembly or the ability to pattern. It was well known to employ spacers in the sealing materials on liquid crystal devices to enable even spacing without stress forces related to omitting them. The use of silver paste to connect the electrodes was conventional, and would have been obvious for that reason. The use of sealing resins was conventional in semiconductor devices, and considered to be obvious for that reason. Further it would have been obvious to replace the low dielectric gas with a resin, as resin were well known for having a low dielectric, and as described above, were conventionally used with semiconductor devices.

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Allowable Subject Matter

Claims 56-60 are allowed.

Response to Arguments

Applicant's arguments regarding the silver paste or spacer used to connect the substrates are not agreed with. In particular, applicant's arguments relating to the word "element" are not agreed with, as anything is an element. In active matrix devices, a the common electrode on the other substrate was conventionally connected to via silver paste or a conductive spacer, and in passive, take out electrodes were done through these. The conductors are "conductive elements", and henceforth are elements (otherwise what applicant considers an element cannot be determined). The conventional use of silver paste or a conductive spacer is evidenced by the following references:

JP61-056322,	Todokoro	abstract
JP03-059543	Ipponsugi et al	
5311342	Watanabe	-column 1 description of conventional art.
5556670	Mihara et al,	column 5
5532850	Someya et al	column 15
5402254	Sasano et al,	column 5
5420708	Yokoyama et al	column 3

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5113273	Mochizuki et al	column 13
6124904	Sato	
62-240934	No abstract, but partial translation indicates silver gives good conduction	

Applicant's arguments regarding "surrounding" are not persuasive, as covering should include surrounding. Applicant appears to be arguing as though the language states "Surrounding but not covering when viewing from the normal to the device", language which is clearly not in the claim. Such language would require that instead of Mawatari, other references would need to be used, however, the applied references '023 and '022 appear to still be relevant. The '022 reference clearly shows a surrounding-but-not-covering resin and a separate covering resin.

Applicant's arguments in respect to the fill port being located in a side without the driver circuits are not agreed with, as motivations have been provided for the combinations. The Niki reference teaches is clearly applicable to Mawatari et al, which would suffer the problem described by Niki if done otherwise. With Matsuo et al, done as a device with a circuit on two sides instead of four, the conventional method of filling such cells is at the edge as shown by the references listed below (with two sides having circuits or connections, there would have been no reason to pierce the substrates), which would have been obvious for that reason. Regarding applicant's assertion that the location is claimed not the alignment of the substrates, it is noted that the primary reference Mawatari has these issues as identical.

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Some references showing that edge filling of two or three circuit sided devices (through connectors or other) was conventional:

JP04-355433

JP05-188379

JP03-246522

JP4-042215

JP3-246522

US5548428

JP4-93925

JP5-188379

JP5-257136

JP5-061054.

JP04-083227

Please note that applicant's advantage of reduced damage due to static may be an unexpected result, or a newly found problem, which would be indicative of non-obviousness. Some evidence establishing facts relating to this should be presented for evaluation, as attorney arguments cannot take the place of facts. With further elaboration it may be possible to overcome the current rejection.

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Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/7/02 has been entered.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Parker whose telephone number is (703) 305-6202.

The fax phone number for this Group is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or preceding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

February 19, 2003

**Kenneth Parker
Primary Examiner
Group Art Unit 28713**